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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/043,372 | 01/09/2002 | Girsh Blumberg | 1-2 | 6330 |

7590 01/16/2003
Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

[REDACTED] EXAMINER

HA, NGUYEN T

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2831

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AJC

| | | |
|------------------------------|-------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/043,372 | BLUMBERG ET AL. |
| | Examiner Nguyen T Ha | Art Unit 2831 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 January 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,3,4,10,12 and 20 is/are rejected.
- 7) Claim(s) 2,5-9,11 and 13-19 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4,5.
- 4) Interview Summary (PTO-413) Paper No(s). _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1,3,4,10,12 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Kashihara et al (5,572,052).

Regarding claims 1&3, Kashihara et al discloses an apparatus comprising: a capacitor having first (143) and second electrodes (145), and a quasi 1D dielectric (144) material having a charge, the electrodes located adjacent portions of the dielectric material (figure 1).

Kashihara et al, as discussed above, essentially discloses the claimed invention but fails to explicitly show a quasi 1D dielectric. However, the examiner hereby takes

official notice that it is well known in the art that the ferroelectric film as taught by Kashihara could be a quasi 1D dielectric material as the invention.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a quasi 1D dielectric material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 4, Kashihara et al further discloses a variable voltage source coupled across the capacitor (figure 4).

Regarding claim 10, Kashihara et al discloses the dielectric material is a doped anti-ferromagnetic (column 8 lines 57-65).

Regarding claim 12, Kashihara et al discloses an apparatus comprising: a capacitor having first (143) and second electrodes (145), and a quasi 1D dielectric (144) material having a charge, the electrodes located adjacent portions of the dielectric material (figure 1).

Kashihara et al, as discussed above, essentially discloses the claimed invention but fails to explicitly show a quasi 1D dielectric. However, the examiner hereby takes official notice that it is well known in the art that the ferroelectric film as taught by Kashihara could be a quasi 1D dielectric material as the invention.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a quasi 1D dielectric material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of

its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 20, Kashihara et al further discloses a variable voltage source coupled across the capacitor (figure 4).

Allowable Subject Matter

3. Claims 2,4,5-9,11,13-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claims 2&13, the prior art alone or in combination does not teach the limitation of the dielectric material is a quasi one-dimensional material whose anisotropy axis is oriented along a line going from one of the electrodes to the other of the electrode.

With respect to claims 4,5-9,11 and 14-18, the prior art alone or in combination does not teach the limitation of the dielectric material has a spin density wave state.

With respect to claim 19, the prior art alone or in combination does not teach the limitation of the dielectric material is an anti-ferromagnetic material with a transition temperature at least as high as room temperature.

Citation Relevant of Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Simon et al disclose high-frequency substrate material for thin-film layered perovskite superconductor.

b. Tempel discloses a method for producing semiconductor memory device having a capacitor.

c. Mizushima et al disclose a capacitor having electrodes with two-dimensional conductivity.

d. Simon et al disclose superconductor josephson junction comprising lanthanum aluminates.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T Ha whose telephone number is 703-308-6023. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3432 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

NH
January 9, 2003

Dean A. Reichard 1/13/03
DEAN A. REICHARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800